Notes on New Guinea Annonaceae, Part I

By JAMES SINCLAIR

THIS PAPER is the result of the examination of some of Carr's New Guinea Annonaceae and certain other type specimens of Annonaceae kindly sent on loan from the Botanisches Museum, Berlin. Four new species are described here, namely *Artabotrys arachnoides*, *Pseuduvaria lignocarpa*, *P. nova-guineensis* and *P. sessilifolia* while eleven new combinations are made.

These combinations include two *Orophea* species transferred to *Alphonsea*, seven *Orophea* species transferred to *Pseuduvaria* and two *Mitrephora* species transferred to *Pseuduvaria*. The result now, is that every single species in *Orophea* mentioned by Diels in Engler's Botanische Jahrbücher volume 49 (1912) pages 157–161 has been transferred to other genera, two to *Alphonsea* and the rest to *Pseuduvaria*. It should be noted that *Orophea aurantiaca* Miq. has already been removed to *Pseuduvaria* by Merrill [see Philipp. Journ. Sc. Bot. 10: 4 (1915) 255] and *O. dielsiana* to *Pseuduvaria* by me [see Gardens' Bull. Singapore 14 (1955) 403].

The differences between *Orophea* and *Pseuduvaria* are clearly defined in the table on page 391 of the Gardens' Bulletin, Singapore, volume 14. *Orophea* has 6–12 miliusoid stamens while in *Pseuduvaria* the stamens are uvarioid and numerous. It is quite obvious, therefore, that something is wrong when Diels states in his key on page 157—"stamens much more than 15." This statement suits *Pseuduvaria* admirably but is absurd for *Orophea*. Apart from the stamens, the other distinguishing characters of Diels' so-called *Orophea* species were in complete agreement with those of the genus *Pseuduvaria* and so the transfer to this genus of these *Orophea* species is effected.

On examining *Orophea stenogyna* and *O. ovata* it was also found they are misfits in the genus *Orophea* and must go into *Alphonsea*. They cannot be placed in *Orophea* since the petals are saccate at the base, and the inner are not mitriform; the stamens too, have apiculate, produced connectives. These are all distinguishing features of *Alphonsea*.

Thanks is due to the Director of the Botanisches Museum, Berlin for the loan of certain types. It is hoped at a later date to publish part 2 of this series but more material has yet to be studied.

SYSTEMATIC PART

Alphonsea ovata (Scheffer) J. Sinclair, **comb. nov.**

Basinym: Orophea ovata Scheffer in Ann. Jard. Buitenz. 1 (1876) 3; Diels in Engl. Bot. Jahrb. 49 (1912) 158.

Specimen, sine numero, collected by Teijsmann, examined (Herb. Berlin).

A. stenogyna (Diels) J. Sinclair, **comb. nov.**

Basinym: Orophea stenogyna Diels in Engl. Bot. Jahrb. 49 (1912) 157.

Type, *Schlechter 17653* examined (Herb. Berlin).

Artabotrys arachnoides J. Sinclair, **sp. nov.**

Ab adhuc speciebus cognitis e Nova-guinea (i.e. *A. inodorus*, *A. camptopetalus* et *A. desmidanthus*) haec species petalis longissimis linearibus differt.

Frutex scandens. *Ramuli* nigrescentes glabri, juniores parce et minute pubescentes. *Folia* coriacea, elliptica, 7–11 cm. longa, 3·5–5 cm. lata, apice et basi acuta in petiolum brevem decurrentia; costa subtus minute adpresso-pubescentes demum glabra; nervi c.7 pares, a costa fere horizontaliter abeuntes, sensim adscendentes, margine duplo-arcuato-conjuncti, graciles sed utrinque conspicui; reticulationes supra distantes paucae subtus densiores. *Pedicelli* 2 cm. longi, glabri. *Sepala* 4–5 mm. longa, ovata, extus parce pubescentia, intus glabra, apice reflexa. *Petala* subaequalia, linearia, plana, apice angustata, basi ferrugineo-tomentosa latiora, in lamina pubescentia, 5–6 cm. longa et 2–3 mm. lata; exteriora 1-nervata. *Stamina* numerosa, 1 mm. longa. *Ovaria* cylindrica, glabra, 1 mm. longa; stigma virgatum leviter falcatum, 1 mm. longum. *Fructus* ignotus. **Fig. 1.**

NOVA-GUINEA: Isuarava, *Carr 15159* holotypus (Herb. Sing). Forest about 1,530 m. altitude. "Flower yellow-green"; Lala River, *Carr 15992* (Herb. Sing.). About 1,660 m. altitude. "Flowers yellow".

Named *A. arachnoides* from the long, narrow petals which look like a spider on the herbarium sheet.

Mitrephora cilindrocarpa Burck in Nova Guinea 8: 3 (1911) 433 Tab. 69 fig. 1a, b; Diels in Engl. Bot. Jahrb. 49 (1912) 156.

Mitrephora ? Valeton in Bull. Dép. Agric. Ind. Néerl. 10 (1907) 13.

This is certainly not a *Mitrephora* and I am not sure in which genus it should be placed. Flowers are needed. Diels was also of the opinion that it is not a *Mitrephora.**

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* I now find that *M. cilindrocarpa* Burck has been revised by Backer in Blumea 5 (1942) 492 to *Polyaulax cylindrocarpus* (Burck) Back.

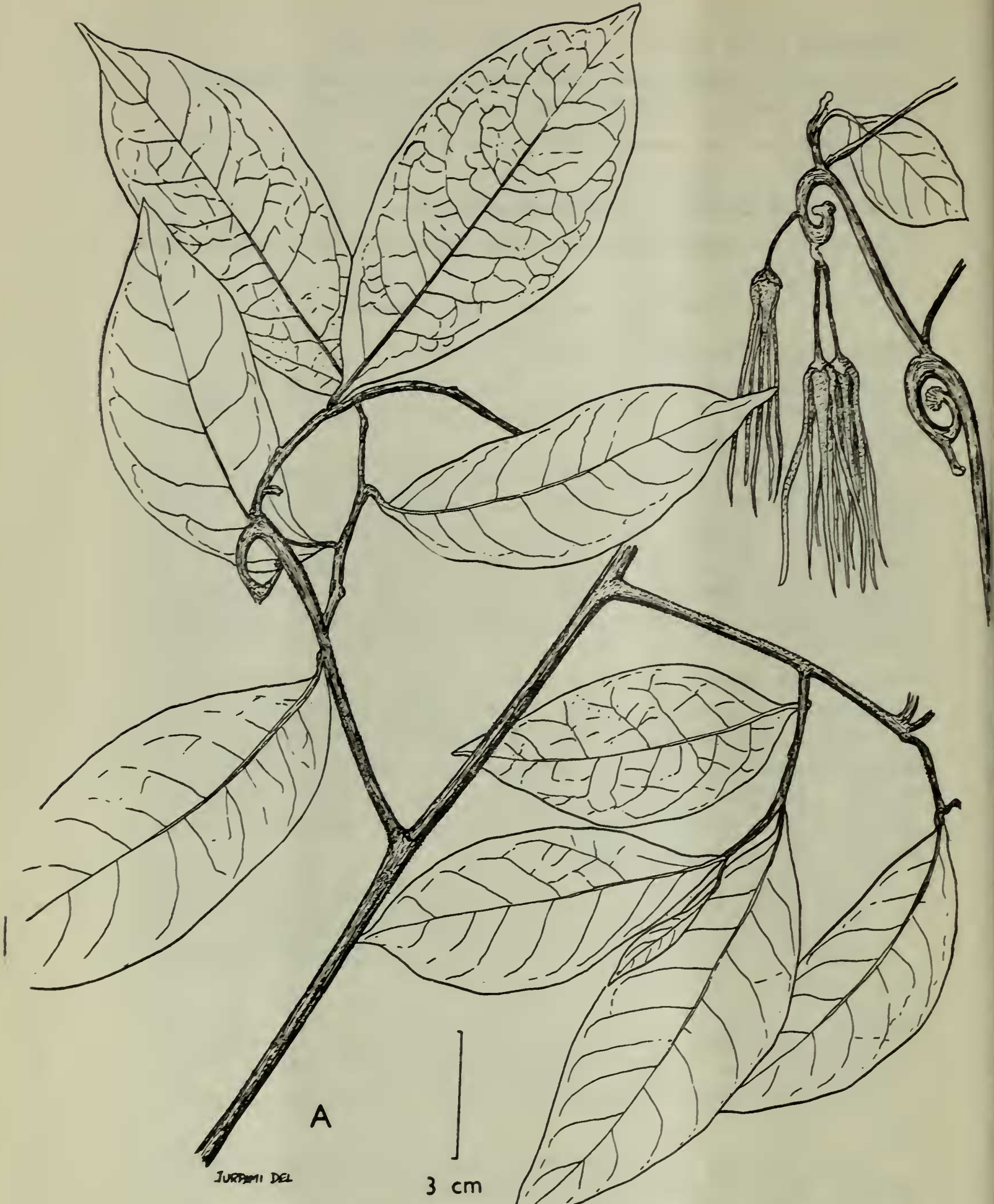

Fig. 1. *Artabotrys arachnoides* J. Sinclair.
A, Leafy twig. B, Flowers.

Pseuduvaria beccarii (Scheffer) J. Sinclair, **comb. nov.**

Basinym: Orophea beccarii Scheffer in Ann. Jard. Buitenz. 2 (1885) 18; Diels in Engl. Bot. Jahrb. 49 (1912) 160.

Type, *Beccari 881* examined (Herb. Berlin).

P. costata (Scheffer) J. Sinclair, **comb. nov.**

Basinym: Orophea costata Scheffer in Ann. Jard. Buitenz. 2 (1885) 19; Diels in Engl. Bot. Jahrb. 49 (1912) 158.

Beccari 1872 examined (Herb. Berlin).

P. dolichonema (Diels) J. Sinclair, **comb. nov.**

Basinym: Orophea dolichonema Diels in Engl. Bot. Jahrb. 52 (1915) 184.

Type, Ledermann 8754 examined (Herb. Berlin and Singapore).

P. filipes (Lauterb. et K. Schum.) J. Sinclair, **comb. nov.**

Basinym: Orophea filipes Lauterb. et K. Schum. in Fl. D. Schutzgeb. Süds. (1901) 319; Diels in Engl. Bot. Jahrb. 49 (1912) 159.

Type, *Lauterbach 1127* examined (Herb. Berlin).

P. grandifolia (Warb.) J. Sinclair, **comb. nov.**

Basinym: Stelechocarpus grandifolia Warb. in Engl. Bot. Jahrb. 13 (1890) 306; Lauterb. et K. Schum. in Fl. D. Schutzgeb. Süds. (1901) 315.

Synonym: Mitrephora grandifolia (Warb.) Diels in Engl. Bot. Jahrb. 49 (1912) 155.

Type, *Warburg 20084* examined (Herb. Berlin).

P. lignocarpa J. Sinclair, **sp. nov.**

Inter species Nova-guineenses haec et *P. versteegii* carpella maxima habent. *P. lignocarpa* carpellis minoribus (3·5–4·5 cm. diam.) globosis, floribus multo minoribus, pedicellis brevioribus, foliis multo minoribus distinguitur.

Arbor 8–10 m. alta. *Ramuli* graciles, striati, nigro-brunnei, mox glabri. *Folia* membranacea, glabra, lanceolata vel elliptico-lanceolata, apice acuminata, basi cuneata, 8–17 cm. longa, 2·5–5 cm. lata; nervi 10–12 pares oblique adscendentes, margine obscure conjuncti, supra tenues, subtus valde prominentes; costa subtus minute verrucosa; reticulationes utrinque tenues; petioli 5 mm.-1 cm. longi. *Flores* axillares, 1–4 fasciculati. *Pedicelli* 1 mm. longi medio minute unibracteati. *Flores masculi* minuti, (probabiliter nondum maturi) fusco-brunneo-tomentosi. *Sepala* ovata, acuta, 0·5–0·8 mm. longa. *Petala exteriora* subrotundata, obtusa, 1·5–1·8 mm.

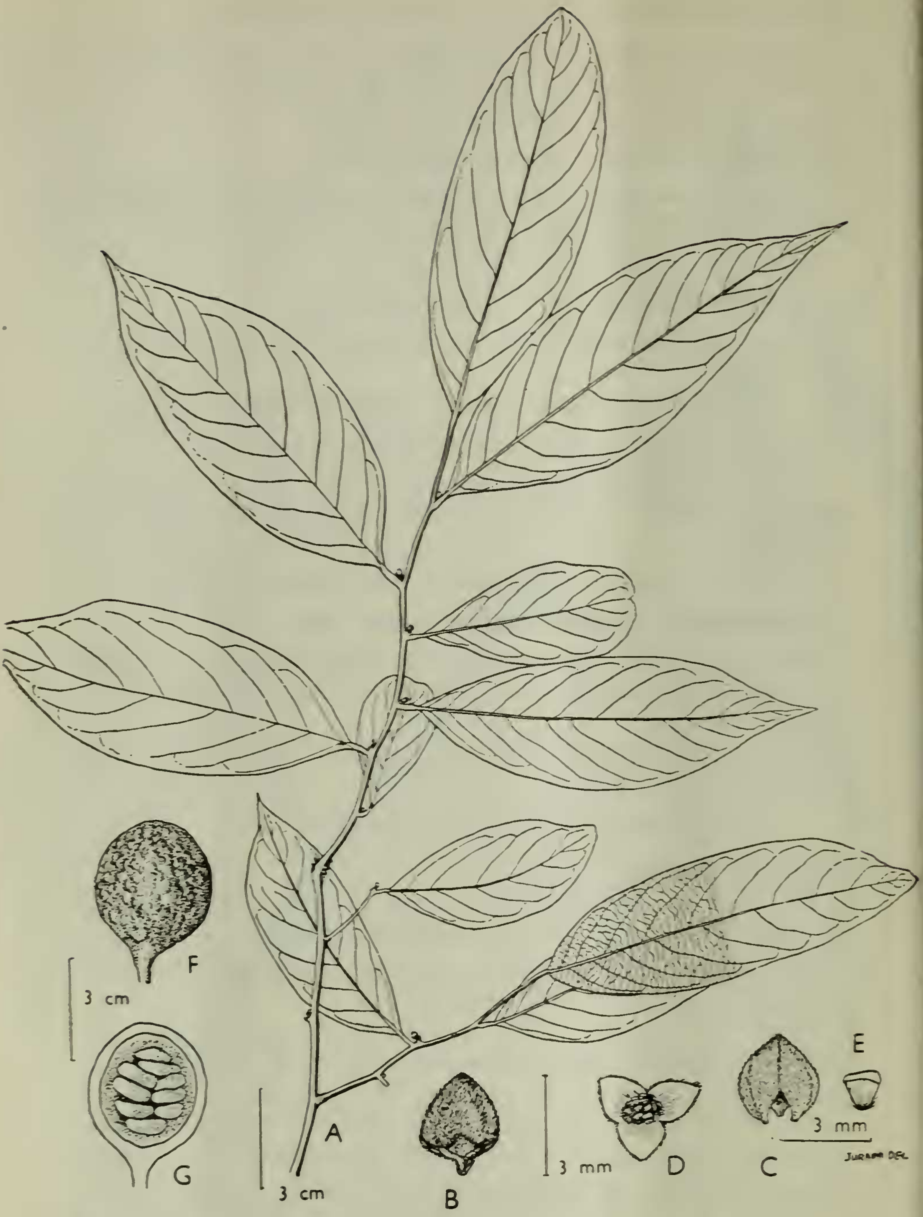

Fig. 2. *Pseuduvaria lignocarpa* J. Sinclair.
A, Flowering twig. B, Flower. C, Inner petals. D, Petals removed, showing stamens. E, Stamen. F, Fruit. G, Fruit, longitudinal section.

longa; interiora mitriformia, breviter unguiculata, 1·5–2 mm. longa. *Stamina* 0·5 mm. longa, 15–20, connectivis truncatis terminta. *Flores feminei* ignoti. *Fructus* cum carpello unico, globosus, minute tomentosus, scabridus vix verrucosus, 3·5–4·5 cm. diam., breviter stipitatus; pericarpium 4 mm. crassum, durum, lignosum. *Semina* c.8 in seriebus duabus disposita. **Fig. 2.**

NOVA-GUINEA: Isuarava, *Carr 15504* holotypus (Herb. Sing.). "Flowers dull brownish olive outside, deep crimson inside." Altitude c.1,500 m.; Boridi, *Carr 14508* (Herb. Sing.). "Fruit olive green." Altitude c.1,500 m.; Boridi, *Carr 14304* (Herb. Sing.). "Flower dark brown." Altitude c.1,330 m.

The distinguishing features of this species are the small flowers, the large, globose, several-seeded, single carpel with hard woody pericarp, borne on a stalk 5 mm. long and the oblique, steeply ascending nerves of the leaf. The male flowers are probably not quite mature and may become slightly larger. I have not seen female flowers but the fruit has only one carpel.

The fruit is the second largest in the known New Guinea species, that of *P. versteegii* being probably the largest in the genus. The latter measures 6–7 cm. long and 4·5–5·5 cm. broad, but is cylindrical in shape, not globose. There are several described species from New Guinea the fruit of which is as yet unknown.

P. mollis (Warb.) J. Sinclair, **comb. nov.**

Basinym: Goniothalamus mollis Warb. in Engl. Bot. Jahrb. 13 (1890) 306.

Synonyms: Mitrephora mollis Lauterb. et K. Schum. in Fl. D. Schutzgeb. Südsee (1901) 320. *Papualthia mollis* (Warb.) Diels in Engl. Bot. Jahrb. 49 (1912) 142.

P. nova-guineensis J. Sinclair, **sp. nov.**

Inter species cum pedunculis plus quam 5 cm. longis haec ponenda est sed pedunculis crassioribus, foliis basi leviter cordatis differt.

Frutex 3 m. altus. *Ramuli novelli* cum pilis 2 mm. longis dense obtecti. *Folia* tenuiter coriacea, oblonga, apice obtusa, basin cordatam versus paullo angustata, 18–30 cm. longa, 5–8 cm. lata, costa excepta, glabra; costa supra pubescens, insculpta, subtus prominens, parce pilosa; nervi 20–25 pares, supra leviter elevati, tenues, subtus prominentes, a costa angulo 70–90° abeuntes, sensim adscendentes, prope marginem arcuato-conjuncti; reticulationes utrinque distinctae; petioli 3–5 mm. longi, setosi. *Pedunculi*

6–7 cm. longi, axillares, extremo in 2–3 pedicellos, 2–3 cm. longos, medio minute uno-bracteatos divisi. *Flores* hermaphroditi (an semper?). *Sepala* 2–3 mm. longa, triangularia, acuminata, extus pubescentia, intus glabra. *Petala exteriora* 7 mm. longa, membranacea, ovata, reticulata, apice acuta, basi angustata vix unguiculata, marginibus pubescentia; *petala interiora* 1 cm. longa, coriacea, mitriformia, brevissime unguiculata, extus puberula, intus fibrillis succulentis glandulosis obtecta. *Stamina* 0·5 mm. longa, apice plana. *Ovaria* 3, dense strigosa, 1 mm. longa, stigmatibus sessilibus terminata. *Fructus* ignotus. **Fig. 3.**

NOVA-GUINEA: Kokoda, *Carr 16186* holotypus (Herb. Sing.). "Flowers dark brown." Altitude c.400 m.

A large leaved species with long peduncles. *P. dolichonema*, *P. filipes*, *P. sessilifolia* and the present species have longer peduncles than any of the other New Guinea species. Those of *P. dolichonema* are the longest in the genus, 20–30 cm. long or even more. those of *P. sessilifolia* 7–10 cm., the present species 6–7 cm., and *P. filipes* about 5 cm. In *P. nova-guineensis* the leaves are slightly cordate at the base. The flower is larger than in most New Guinea species and the inner petals have numerous short, thread-like glands. Only one mature flower was available for examination and it was found to be hermaphrodite. It had numerous fertile stamens and three ovaries. Usually *Pseuduvaria* has pistils in one flower and stamens in another but often there are staminodes or one or two partially fertile stamens in a female flower.

P. pulchella (Diels) J. Sinclair, **comb. nov.**

Basinym: Orophea pulchella Diels in Engl. Bot. Jahrb. 49 (1912) 159.

Type, *Schlechter 17057* examined (Herb. Berlin).

P. rhytidophylla (Diels) J. Sinclair, **comb. nov.**

Basinym: Orophea rhytidophylla Diels in Journ. Arn. Arb. 20 (1939) 74.

Type examined, *Brass 6736* (Herb. Berlin).

P. sessilifolia J. Sinclair, **sp. nov.**

In Nova-guinea duae species tantum cum pedunculis longissimis adhuc cognitae sunt, scilicet *P. dolichonema* et *P. sessilifolia* sed ab hac cum pedunculis 20–30 cm. longis, ab illa (*P. sessilifolia*) pedunculis 7–10 cm. longis, foliis caudatis sessilibus differt.

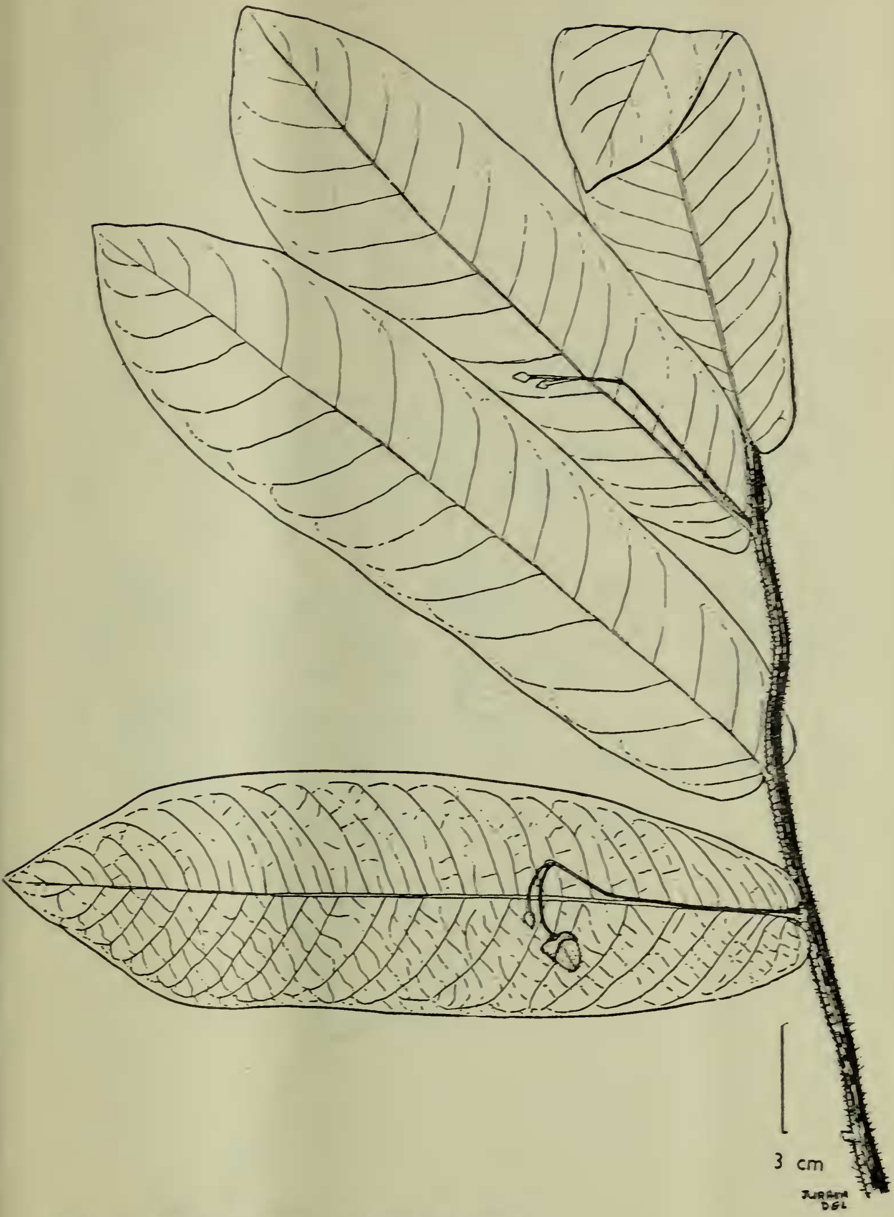

Fig. 3. *Pseuduvaria nova-guineensis* J. Sinclair.
Flowering twig.

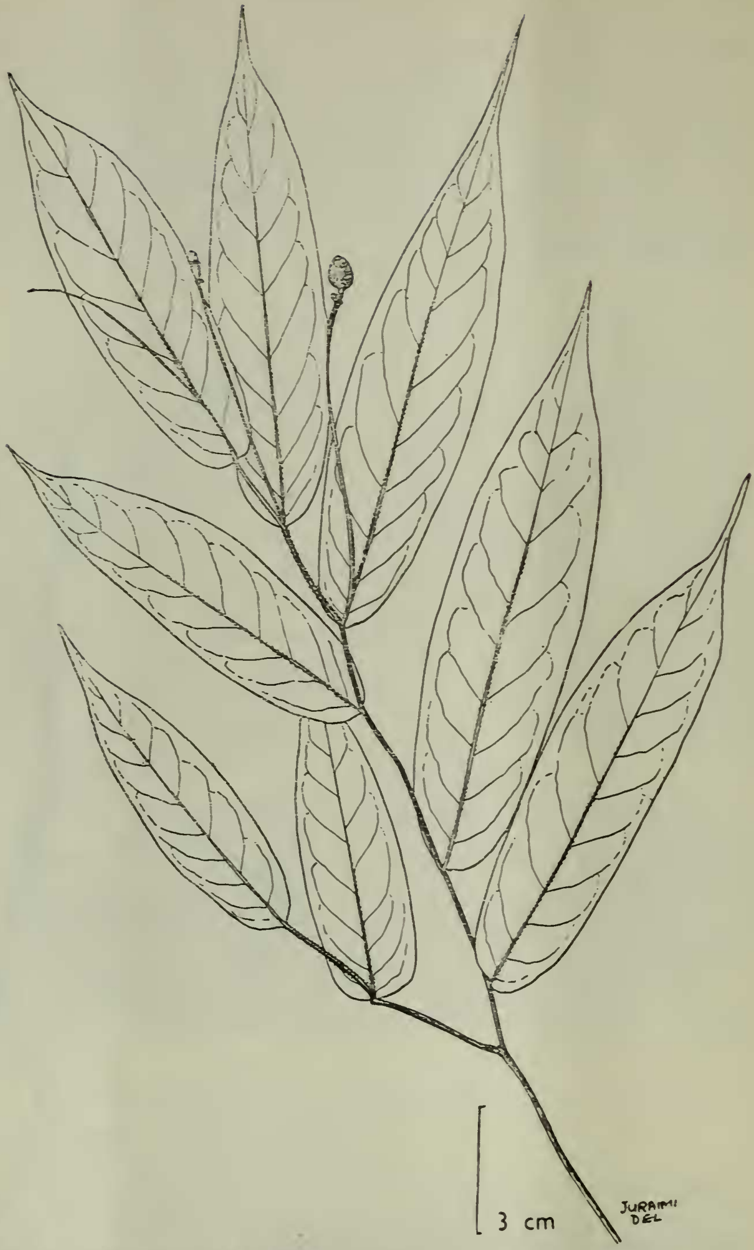

Fig. 4. *Pseuduvaria sessilifolia* J. Sinclair.
Flowering and fruiting twig.

Frutex 3 m. altus. *Ramuli* graciles, flexiles, juventute pilis fulvis erectis 0·5 mm. longis tecti, mox glabri, nigrescentes. *Folia* membranacea, lanceolata, sessilia, apice acuta, basi rotundata emarginata, subtus secus costam tantum parce pilosa, in altera parte glabra, 9–14 cm. longa, 2–3·5 cm. lata; nervi 10–12 pares sensim adscendentes, 3–5 mm. margine arcuato-conjuncti, supra tenues, subtus conspicui; reticulationes subtus tantum conspicui, laxae dispositae. *Pedunculus* 7–10 cm. longus, pedicellis duobus 5 mm. longis terminatus. *Flores masculi: sepala* membranacea, ovata, vix 1 mm. longa; *petala exteriora* membranacea, rotundata, minute puberula, 2 mm. diam., *petala interiora* coriacea, mitriformia, unguiculata in partibus cohaerentibus pubescentia, 4 mm. longa; *stamina* 0·5 mm. longa, vertice plana. *Flores feminei*: *petala* et *sepala* ut in masculo; *stamina* pauci partim fertilia; *ovaria* 3–4, strigosa, 1·3 mm. longa, stigmatibus subcapitatis. *Fructus* juvenilis: carpella 3–4; unum carpellum tantum maximum, 6 mm. diam., minute incano-tomentosum, breviter stipitatum, altera carpella minima, conformia, probabiliter cauduca. **Fig. 4.**

NOVA-GUINEA: Isuarava, *Carr 15763* holotypus (Herb. Sing.). Altitude c.1,160 m.

The fruit is very young but it seems that one carpel will develop at the expense of the rest which will fall. There were several partially fertile stamens and one or two which had larger connectives and looked almost normal in the female flower dissected.

P. silvestris (Diels) J. Sinclair, **comb. nov.**

Basinym: Orophea silvestris Diels in Engl. Bot. Jahrb. 49 (1912) 160.

Type, *Schlechter 17450* examined (Herb. Berlin).